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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,369	07/06/2001	Alan Weir Bucher	PU010126	6022

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EXAMINER
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LEURIG, SHARLENE L

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/900,369

Applicant(s)

BUCHER, ALAN WEIR

Examiner

Sharlene Leurig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0922203</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on September 22, 2003 has been entered and acknowledged by the examiner. Claim 1 has been amended.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kume et al. (5,111,107) (of record).

Regarding claim 1, Kume discloses a tension mask frame assembly for a CRT comprising a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other, the frame having a pair of opposing long sides (Figure 1, elements 1 and 2) extending in parallel to the major axis and a pair of opposing short sides (3 and 4) extending in parallel to the minor axis. Each side has an outer peripheral surface and an inner peripheral surface. A tension mask (6) is supported between a pair of support blade members, the upper leg of the L-shaped long members (Figure 2, element 5a), which are attached to the frame at a point along a respective one of the pair of opposing sides. A detensioning member (9) is fixed along the peripheral surface

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of at least one of the sides, and has a second coefficient of thermal expansion whereby the attachment points are drawn toward each other during thermal cycling of the assembly, as illustrated in Figure 2.

Regarding claim 3, Kume discloses that the second coefficient of thermal expansion is greater than the first coefficient of thermal expansion of the frame, including the inner surface of the long sides and the outer surface of the short sides (column 2, lines 65-68).

Regarding claim 6, the opposing long and short sides lie in a frame plane, specifically the plane that encompasses the area where the long and short sides meet.

Regarding claim 7, the peripheral surface along which the detensioning member (9) is fixed lies generally orthogonal to the frame plane.

Regarding claim 8, a pair of support blade members (Figure 2, element 5a) has at least one generally central attachment point for attaching each of the support blade members to a pair of opposing sides of the frame.

4. Claims 1, 2 and 6-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ragland, Jr. (5,932,957) (of record).

Regarding claim 1, Ragland discloses a tension mask frame assembly for a CRT comprising a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other, the frame having a pair of opposing long sides (Figure 3, element 50) extending in parallel to the major axis and a pair of opposing short sides (40) extending in parallel to the minor axis. Each side has an outer peripheral surface

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and an inner peripheral surface. A tension mask (24) is supported between a pair of support blade members (52) attached to the frame at a point along a respective one of the pair of opposing sides. A detensioning member (60) is fixed along the peripheral surface of at least one of the sides, and has a second coefficient of thermal expansion whereby the attachment points are drawn toward each other during thermal cycling of the assembly, as illustrated in Figure 3.

Regarding claim 2, the detensioning member has a lower thermal coefficient of expansion than the frame, including the outer surface of the long side and the inner surface of the short sides.

Regarding claim 6, the opposing long and short sides lie in a frame plane, specifically the plane that encompasses the area where the long and short sides meet.

Regarding claim 7, the peripheral surface along which the detensioning member (60) is fixed lies generally orthogonal to the frame plane.

Regarding claim 8, a pair of support blade members (Figure 3, element 52) having at least one generally central attachment point for attaching each of the support blade members to a pair of opposing sides of the frame.

Regarding claim 9, Ragland discloses a cathode ray tube comprising a glass envelope having a rectangular facepanel (Figure 1, element 18) and a tubular neck (14) extending from the panel through a funnel (15), a phosphor screen (22) carried by an inner surface of the faceplate panel, an electron gun (26) centrally mounted within the neck, and a tension mask frame assembly (35) mounted between the electron gun and the panel. The mask frame assembly has the limitations described above with respect to claim 1, including a tension mask supported on a frame between a pair of mounting

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locations and a detensioning member formed along at least one side of the frame, and having a coefficient of thermal expansion whereby the mounting locations are drawn toward each other during thermal cycling of the mask frame assembly, as shown in Figure 3.

Regarding claim 10, a pair of support blade members (Figure 3, element 52) are mounted to the tension mask frame assembly at the mounting locations.

Regarding claim 11, the tension mask (24) is attached to the support blade members (52).

Regarding claim 12, the long and short sides lie in a common plane, specifically the plane that encompasses the area where the long and short sides meet.

Regarding claim 13, the detensioning member (60) is fixed along a peripheral surface of one of the sides that is generally orthogonal to the frame plane.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ragland, Jr. (5,932,957) (of record) in view of Kume et al. (5,111,107) (of record).

Regarding claim 4, Ragland discloses a cathode ray tube having a tension mask frame assembly comprising a mask mounted in tension on a substantially rectangular

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frame having a first coefficient of thermal expansion and including a pair of opposing long sides and short sides disposed at generally a right angle with respect to the long sides. The sides are connected to form a continuous generally planar frame having an inner and outer peripheral surface, since "planar" means "involving two dimensions", "being made of flat planes", or "lying in a plane". The frame disclosed by Ragland can be considered planar, as it is composed of constituents that lie in a plane together in the areas where the long and short sides join, and furthermore is composed of constituents that are made of flat planes. Ragland discloses detensioning members (Figure 3, element 60) fixed along the peripheral surfaces of the sides and having a second coefficient of thermal expansion that is lower than the thermal coefficient of expansion of the frame, including the outer surface of the long side and the inner surface of the short sides. The detensioning member is formed of a Pyromet alloy (column 4, line 1). The detensioning member serves to draw the opposing sides of the frame toward each other upon heating, to maintain the tension of the mask.

Ragland lacks disclosure of detensioning members with a coefficient of thermal expansion greater than that of the frame, including the inner surface of the long sides and the outer surface of the short sides.

Kume teaches detensioning members with a coefficient of thermal expansion that is greater than that of the frame, including the outer surface of the short sides and the inner surface of the long sides, and positioned in such a way as to draw the opposing sides toward each other to return tension to the assembly, as shown in Figure 2. The detensioning member is made of stainless steel (column 2, line 67).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cathode ray tube of Ragland to have a mask frame assembly with detensioning members formed of a material with a coefficient of thermal expansion that is greater than the frame and in such a position in relation to the side members of the frame in order to achieve the same effect as the Ragland mask frame assembly, specifically of the opposing sides being drawn together upon thermal cycling so that the frame maintains tension, in the case of stainless steel taught by Kume being more readily available or affordable than the alloy disclosed by Ragland.

Regarding claim 5, Ragland discloses a pair of support blade members (Figure 3, element 52) having at least one generally central attachment point for attaching each of the support blade members to a pair of opposing sides of the frame.

### ***Response to Arguments***

7. Applicant's arguments filed on September 22, 2003 have been fully considered but they are not persuasive.

The applicant has argued with respect to claims 1-3 that neither Ragland nor Kume discloses a tension mask being supported between support blade members attached to the frame at an attachment point along opposing sides of the mask frame.

The examiner disagrees and directs the applicant to Figure 2, element 5a of Kume and Figure 3, element 52 of Ragland, both of which disclose support blade members joined to the mask frame for supporting the tension mask. Both Ragland and Kume disclose the frame having a first coefficient of thermal expansion that is different from that of the detensioning member.



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The rejections of claims 1-3 are maintained.

Regarding claims 4-13, the applicant has argued that the combination of the Fendley reference with the Ragland and Kume references lacks motivation and therefore the examiner has failed to establish a case of prima facie obviousness. The examiner agrees with the applicant's arguments. However, the examiner contends that the Kume and Ragland references are sufficient to anticipate the claim limitation of the frame being a "continuously generally planar frame", as recited in claim 4. The definition of "planar" is "involving two dimensions", "being made of flat planes", or "lying in a plane". Both of the mask frames disclosed by Ragland and Kume can be considered planar, as they are composed of constituents that lie in a plane together in the areas where the long and short sides join, and furthermore are composed of constituents that are made of flat planes.

Therefore the rejection of claims 4-13 is maintained.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

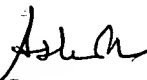
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharlene Leurig whose telephone number is (571) 272-2455. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**ASHOK PATEL**  
**PRIMARY EXAMINER**